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| 10/068,814      | 02/05/2002  | Raymond R. Wolter    | 17310-241650        | 8433             |

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EXAMINER

TUPPER, ROBERT S

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2632

DATE MAILED: 06/16/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/068,814

Applicant(s)

WOLTER ET AL

Examiner

Robert S Tupper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21, 23 and 25-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21, 23, and 25-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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1. Claims 1-21, 23, and 25-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following claims are indefinite as follows:

The term "substantial" in claims 1, 17, and 35 is a relative term which renders the claim indefinite. The term "substantial" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Applicant should recite the structural features that provide the listed function.

The term "enhance" in claim 18 is a relative term which renders the claim indefinite. The term "enhance" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Applicant should recite the structural features that provide the listed function.

The term "reduce" in claims 19 and 20 is a relative term which renders the claim indefinite. The term "reduce" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Applicant should recite the structural features involved.

The following claims are incomplete and indefinite as follows:

In claim 18, the recitation "configured to enhance the dynamic response" is incomplete and indefinite since the claim does not further recite any structural features

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to provide the listed function. Applicant must either recite the structural features involved or utilize the "means plus function" format to invoke 112 par.6.

In claim 19, the recitation "aerodynamically configured to reduce vibration" is incomplete and indefinite since the claim does not further recite any structural features to provide the listed function. Applicant must either recite the structural features involved or utilize the "means plus function" format to invoke 112 par.6.

In claim 20, the recitation "aerodynamically configured to reduce wind drag" is incomplete and indefinite since the claim does not further recite any structural features to provide the listed function. Applicant must either recite the structural features involved or utilize the "means plus function" format to invoke 112 par.6.

In claim 40, the recitation "configuring an integrated circuit chip for enhanced dynamic response" is incomplete and indefinite since the claim does not further recite any structural features to provide the listed function. Applicant must either recite the structural features involved or utilize the "means plus function" format to invoke 112 par.6.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1-13, 17, 18, 21, 23, 29, 30, and 35-40 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by SHIRAISHI et al (6,144,530).

Note figures 1-4. SHIRAISHI et al ('530) shows a head suspension with a chip (13) mounted by bonding on the flexure (14). The chip is electrically connected to the head and external electrical components by a printed circuit (17). The chip is a substantial structural part of the suspension (re claims 1 and 35) and inherently stiffens the suspension (re claim 17).

Note: (A) claims 4 and 38 do not require that the chip be directly mounted to the load beam; (B) claim 5 does not specify how far apart the two portions are located or preclude the portions from being contiguous; (C) claim 6 does not require that the first section stop at the spring region; (D) the chip (including its shape) attached to the flexure will inherently stiffen the suspension and thus enhances the dynamic response of the suspension (re claim 18); (E) all chips generate heat and their external surfaces dissipate that heat (re claim 21); (F) all chips are configured to be attached (re claim 23); (G) bonding reads on "mechanically fastened (re claim 30); and (H) claim 39 does not require the portions of the load beam to be spaced and discontinuous.

4. Claims 1-10, 12, 13, 17, 18, 21, 23, 29, 30, and 35-40 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by SHIRAISHI et al (6,084,746).

Note figures 1-4. SHIRAISHI et al ('746) shows a head suspension with a chip (20) mounted by bonding on the load beam/flexure (31, 30). The chip is electrically connected to the head and external electrical components by a printed circuit (33). The

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chip is a substantial structural part of the suspension (re claims 1 and 35) and inherently stiffens the suspension (re claim 17).

Note: (A) claims 4 and 38 do not require that the chip be directly mounted to the load beam; (B) claim 5 does not specify how far apart the two portions are located or preclude the portions from being contiguous; (C) claim 6 does not require that the first section stop at the spring region; (D) the chip, including its shape, enhances the performance of the suspension (re claim 18); (E) all chips are generate heat and their external surfaces dissipate that heat (re claim 21); (F) all chips are configured to be attached (re claim 23); (G) bonding reads on "mechanically fastened (re claim 30); and (H) claim 39 does not require the portions of the load beam to be spaced and discontinuous.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over SHIRAISHI et al (6,144,530) or SHIRAISHI et al (6,084,746).

Both show a head suspension with an IC chip attached substantially as claimed.

Both differ in not utilizing welding to attach the IC chip.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the listed welding. The motivation is as follows: these are art recognized equivalents that operate in the same manner and produce the same results without any unexpected results.

7. Claims 14-16, 19, 20, 25-27, and 31-34 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. The status of claims 14-16, 31, 32, and 34, previously objected to in the first Office Action, was been changed to rejected under 112 par.2 because of Applicant's amendment to claim 1.

9. Applicant's arguments filed 5/26/04 have been fully considered but they are not persuasive.

Concerning the 112 par.2 rejections, Applicant continues to present claims that (A) recite functions without reciting the structural features that provide such, and (B) utilize relative terminology.

Concerning (A), Applicant must recite the structural features involved, or utilize the "means plus function" format to invoke 112 par.6.

Concerning (B), the relative terms have been specifically identified in the body of the 112 par.2 rejection. These would be acceptable IF Applicant were to recite the structural features that provide the listed functions.

Concerning the art rejections, Applicant argues that the references do not show a suspension where the IC chip provides "substantial" structural support. As noted in the 112 rejection, the recitation of "substantial" without further recitation of structure is indefinite. It is the Examiner's position, that the IC chips in the cited references inherently increase the rigidity of the suspensions, and that effect is considered to be substantial.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert S Tupper whose telephone number is 703-308-1601. The examiner can normally be reached on Mon - Fri, 6:00 AM - 3:30 PM (first Fri off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 703-305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert S Tupper  
Primary Examiner  
Art Unit 2652

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